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Exploring the Ethnobotanical Significance of Palmera Palm (*Borassus flabellifer L.*) for Sustainable Development in *Vikasit Bharat* 2047"

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Abstract

Borassus flabellifer L., commonly known as Palmyra or Palmera Palm, has been integral to India's ethnobotanical heritage for centuries. This paper explores its multifunctional uses—from food and medicine to fibre and eco-friendly materials—and its role in fostering sustainable livelihoods. With India's ambitious vision of *Vikasit Bharat* 2047, focused on inclusive, green, and technology-driven growth, the Palmyra palm offers promising opportunities to enhance rural economies, promote climate resilience, and conserve biodiversity. This research reviews the ethnobotanical importance, evaluates sustainable value chains, and proposes integrated approaches to mainstream the Palmyra palm for holistic national development.

Key words: **Borassus flabellifer, Palmyra palm, Palmyra sap**

Introduction

Borassus flabellifer L., a large dioecious palm species native to tropical regions of India and Southeast Asia, is often referred to as the "tree of life" due to its multifaceted utility [1]. Its resilience to harsh climatic conditions, drought tolerance, and ability to grow on marginal and arid lands make it a crucial resource for sustaining rural livelihoods in semi-arid regions of India such as Tamil Nadu, Odisha, Andhra Pradesh, Maharashtra and West Bengal [2].

Historically, indigenous communities have utilized almost every part of the Palmyra palm, from its fruits and sap to leaves and timber, for food, beverages, medicinal products, handicrafts, construction, and even as writing material. Ethnobotanical knowledge surrounding this palm embodies centuries of traditional wisdom for sustainable natural resource management [3].

Against the backdrop of the Government of India's vision for "*Vikasit Bharat* 2047," which targets economic growth alongside ecological sustainability and social equity, integrating Palmyra palm-based agroforestry, value addition, and community entrepreneurship can be a pathway to climate resilience and rural empowerment [4].

This paper aims to comprehensively explore the ethnobotanical significance of *Borassus flabellifer* with a focus on its applications for sustainable development, drawing lessons from cultural heritage and recent scientific advancements.

Ethnobotanical Significance of Borassus flabellifer

Traditional uses and cultural importance

- Food and beverages: The juice (toddy or neera), fruit pulp, and jaggery produced from Palmyra sap serve as nutritious, natural sweeteners with medicinal benefits [5].
- Medicinal properties: Various parts of the palm exhibit pharmacological activities such as antimicrobial, anti-inflammatory, hepatoprotective, and digestive aid properties [6].
- Craft and construction: Leaves are used for weaving mats, fans, baskets, and thatching roofs; timber and leaf stalks serve in building materials [3].
- Writing materials: Historically, treated leaves have been used as palm leaf manuscripts for ancient texts, underscoring its cultural importance [3].

Ecological and climate resilience roles

- Adaptability to arid and semi-arid climates with low rainfall and poor soils [7].
- Soil stability, biodiversity conservation, and carbon sequestration benefits from Palmyra-dominated agroforestry systems [8].

Sustainable Development Implications for *Vikasit Bharat* 2047

Contribution to rural livelihoods

- Income generation through harvesting and processing of value-added products such as jaggery, candy, beverages, handicrafts [9].
- Empowerment of women and youth via small-scale industries and cooperatives [10].
- Low-input, eco-friendly cultivation preserving traditional knowledge and promoting bioeconomy [10].

Opportunities for value chain enhancement

- Adoption of modern post-harvest technologies to improve product quality and market reach [11].
- Organic and sustainable certification potential to access health-conscious and international markets [12].
- Potential for eco-tourism and cultural heritage promotion in Palmyra-growing regions.

Policy perspectives and recommendations

- Integrate Palmyra palm conservation into national agroforestry and sustainable land-use policies [13].
- Incentivize farmers and entrepreneurs towards Palmyra-based agri-business as part of climate action commitments.
- Support research and extension services on propagation, pest management, and product innovation.

Conclusion

Borassus flabellifer L. embodies a unique intersection of ethnobotany, environmental sustainability, and socio-economic development. Harnessing its full potential aligns closely with the goals of Vikasit Bharat 2047 to create an inclusive, resilient, and prosperous India. By blending ancient knowledge with modern innovation, Palmyra palm can significantly contribute to sustainable rural development and green economic growth.

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